

PROJECT TITLE : QA ANALYTICAL SERVICES
PERIOD COVERED : JULY 22 - AUGUST 26 1981
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1.1. METHODS

- Determination of additives in cigarette paper

In connection with a request for the determination of additives in cigarette paper (see 3.12.) a HPLC method was developed. Using a column "AMINEX HPX-87" of 300 x 7.8 mm and sulfuric acid 0.1 n as an eluent, it is possible to determine simultaneously sulfate, phosphate, citrate, tartrate, formate and acetate. Only carbonate has to be determined in a separate analysis. Figure 1 shows the separation performance with the above-mentioned anions; figure 2 shows a typical chromatogram of a cigarette paper extract.

Further investigation showed that the separation performance on the column "AMINEX HPX-87" seems to be better than for example on a "LICHROSORB 10 RP8". Figure 3 shows a chromatogram with a mixture of sugars and acids theoretically present in aqueous tobacco extracts.

2.1. CASING KITCHEN

- FLT-PC (1)

The preparation procedure for the new FLT-PC solution was established.

- MERA-AC (1)

The preparation procedure was modified. The order of adding the ingredients was changed in order to simplify the preparation.

3.2.2. QUALITY CONTROL OF TOBACCO INGREDIENTS

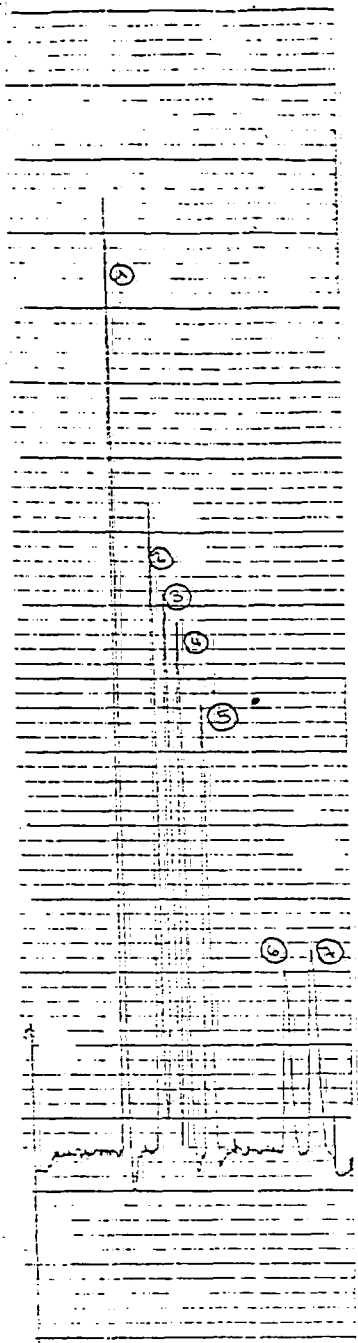
- Ingredients used in Bergen op Zoom for MLF-production (2)

Due to taste problems with MLF-cigarettes produced in March 1981, all the ingredients were submitted to an analytical control.

All the products corresponded to the specifications or were comparable with the preliminary shipments. Furthermore the applied solutions (PC, AC, Burley Casing, Burley TF) were up to standard.

FIGURE 1

- 1 Sulfate
- 2 Phosphate
- 3 Citrate
- 4 Tartrate
- 5 Malic acid (internal standard)
- 6 Formate
- 7 Acetate



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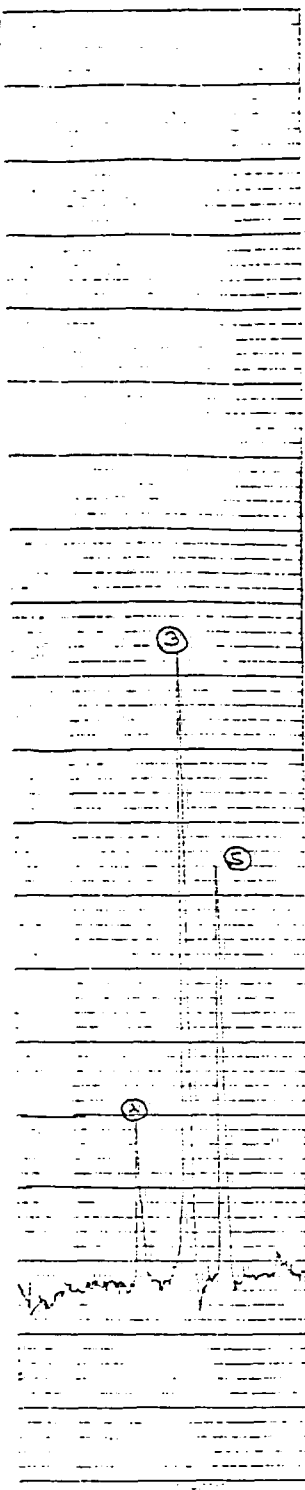


FIGURE 2

CIGARETTE PAPER EXTRACT

- 1 Sulfate
- 3 Citrate
- 5 Malic acid
(internal standard)

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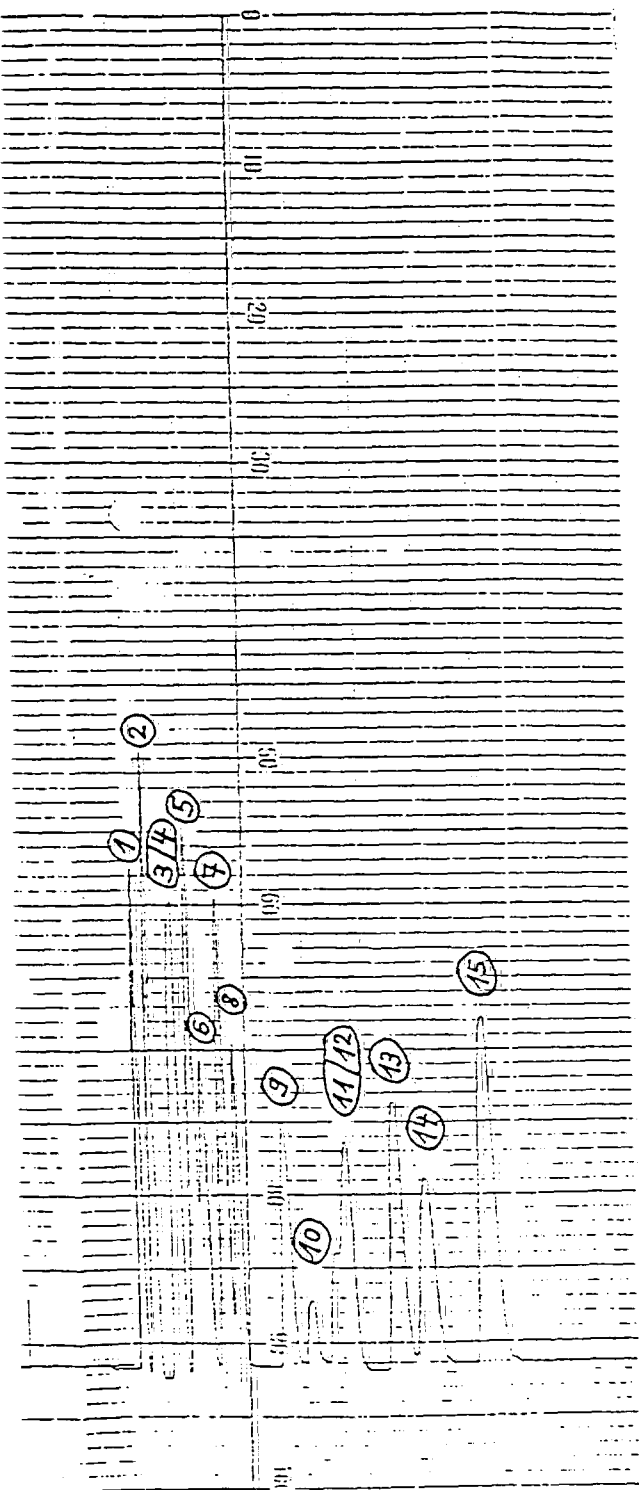


FIGURE 3

- 1 Sulfate
- 2 Oxalic acid
- 3 + 4 Phosphate + Saccharose
- 5 Citrate
- 6 Glucose
- 7 Fructose
- 8 Malonic acid
- 9 Succinic acid
- 10 Formate
- 11 + 12 Acetate + Glutaric acid
- 13 Propionic acid
- 14 Adipic acid
- 15 Butyric acid

- MF-AC Base

When irregularities in the product stocked in Holland were found, the stock in Onnens was examined. Olfactive tests and GC-fingerprints showed a difference between the MF-AC bases produced in 1979 and 1980.

MLF-cigarettes with the bases of the production periods in question were produced and submitted to a subjective evaluation (panel B). A significant difference between the two cigarettes was found. On the basis of this result, test-cigarettes with 50 % MF-AC base produced in 1979 and 50 % MF-AC base produced in 1980 were made. No significant difference was found in the subjective evaluation, neither in comparison with the production of 1979, nor with the production of 1980.

It was therefore decided to use up the 1979 stock by mixing it in a 50:50 ratio with the 1980 production

3.5.1. TRIALS WITH NEW SUPPLIES OF FILTER GLUES

- Liquid glue for KDF II (filter rod seam) (LAESSER AG, Erlinsbach)

A series of trials on the machine with ten types of glues was organised.

Test-cigarettes were produced from five types which showed promising results on the machine. In the subjective evaluation (panel A) two types ("1793 D 2" and "1793 D 3") were considered as being up to standard. As the glue "1793 D 2" showed a better machineability than the type "1793 D 3", the trials will be continued with the first one.

3.12. QUALITY CONTROL OF CIGARETTE PAPER

- Determination of additives (4)

In 11 different types of paper, the anions were determined by HPLC and the cations (Mg, Ca, Na and K) by atomic absorption.


5.3. ASSISTANCE TO OTHER COUNTRIES

- Analyses for the ETNA-plant in PMG Munich
Humectants in tobacco (3 samples)
- Analyses for the ETNA-plant in PMH Bergen op Zoom
Humectants in tobacco (2 samples)

5.4. SERVICES FOR OTHER GROUPS

- Analyses for Process Development
 - SiO₂ in dust and tobacco (23 samples)
 - Chloride in tobacco (8 samples)
 - Ash-content of tobacco (8 samples)
 - K, Ca and Mg in tobacco (8 samples)
- Analyses for Product Development
 - Humectants in cigarettes (4 samples)

REFERENCES

- 1 Letter from Schwarb-A to the CASING KITCHEN (July 22 1981)
 - 2 Letter from Schwarb-A to Lopes-F (April 9 1981)
 - 3 Letter from Schwarb-A to Häusermann-M (April 9 1981)
 - 4 Letter from Keller-I to Erkohen-E (August 26 1981)
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Enclosures

ALW/edk/SEPTEMBER 3 1981

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